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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR  | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|-----------------------|---------------------|------------------|
| 09/998,360  | 11/29/2001  | Rowan Bosworth-Davies | TN223               | 5529             |
| 7590  | 01/13/2004  |                       | EXAMINER            |                  |
| UNISYS Corporation<br>Unisys Way, MS/E8-114<br>Blue Bell, PA 19424-0001 |             |                       | PATEL, JAGDISH      |                  |
|   |             |                       | ART UNIT            | PAPER NUMBER     |
|   |             |                       | 3624                |                  |

DATE MAILED: 01/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                        |  |
|------------------------------|------------------------|------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b>    |  |
|                              | 09/998,360             | BOSWORTH-DAVIES ET AL. |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>        |  |
|                              | JAGDISH N PATEL        | 3624                   |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 29 November 2001.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-65 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:  
1. Certified copies of the priority documents have been received.  
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)                    4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)                    5) Notice of Informal Patent Application (PTO-152)  
3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5,6.                    6) Other:

**DETAILED ACTION*****Claim Rejections - 35 USC § 101*****1. 35 U.S.C. 101 reads as follows:**

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**2. Claims 22-43 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

As an initial matter, the United States Constitution under Art. I, §8, cl. 8 gave Congress the power to "[p]romote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries". In carrying out this power, Congress authorized under 35 U.S.C. §101 a grant of a patent to "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition or matter, or any new and useful improvement thereof." Therefore, a fundamental premise is that a patent is a statutorily created vehicle for Congress to confer an exclusive right to the inventors for "inventions" that promote the progress of "science and the useful arts". The phrase "technological arts" has been created and used by the courts to offer another view of the term "useful arts". See *In re Musgrave*, 167 USPQ (BNA) 280 (CCPA 1970). Hence, the first test of whether an invention is eligible for a patent is to determine if the invention is within the "technological arts".

Further, despite the express language of §101, several judicially created exceptions have been established to exclude certain subject matter as

being patentable subject matter covered by §101. These exceptions include "laws of nature", "natural phenomena", and "abstract ideas". See *Diamond v. Diehr*, 450, U.S. 175, 185, 209 USPQ (BNA) 1, 7 (1981). However, courts have found that even if an invention incorporates abstract ideas, such as mathematical algorithms, the invention may nevertheless be statutory subject matter if the invention as a whole produces a "useful, concrete and tangible result." See *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* 149 F.3d 1368, 1973, 47 USPQ2d (BNA) 1596 (Fed. Cir. 1998).

This "two prong" test was evident when the Court of Customs and Patent Appeals (CCPA) decided an appeal from the Board of Patent Appeals and Interferences (BPAI). See *In re Toma*, 197 USPQ (BNA) 852 (CCPA 1978). In *Toma*, the court held that the recited mathematical algorithm did not render the claim as a whole non-statutory using the Freeman-Walter-Abele test as applied to *Gottschalk v. Benson*, 409 U.S. 63, 175 USPQ (BNA) 673 (1972). Additionally, the court decided separately on the issue of the "technological arts". The court developed a "technological arts" analysis:

The "technological" or "useful" arts inquiry must focus on whether the claimed subject matter...is statutory, not on whether the product of the claimed subject matter...is statutory, not on whether the prior art which the claimed subject matter purports to replace...is statutory, and not on whether the claimed subject matter is presently perceived to be an improvement over the prior art, e.g., whether it "enhances" the operation of a machine. *In re Toma* at 857.

In *Toma*, the claimed invention was a computer program for translating a source human language (e.g., Russian) into a target human language (e.g.,

English). The court found that the claimed computer implemented process was within the "technological art" because the claimed invention was an operation being performed by a computer within a computer.

The decision in State Street Bank & Trust Co. v. Signature Financial Group, Inc. never addressed this prong of the test. In State Street Bank & Trust Co., the court found that the "mathematical exception" using the Freeman-Walter-Abele test has little, if any, application to determining the presence of statutory subject matter but rather, statutory subject matter should be based on whether the operation produces a "useful, concrete and tangible result". See State Street Bank & Trust Co. at 1374. Furthermore, the court found that there was no "business method exception" since the court decisions that purported to create such exceptions were based on novelty or lack of enablement issues and not on statutory grounds. Therefore, the court held that "[w]hether the patent's claims are too broad to be patentable is not to be judged under §101, but rather under §§102, 103 and 112." See State Street Bank & Trust Co. at 1377. Both of these analysis goes towards whether the claimed invention is non-statutory because of the presence of an abstract idea. Indeed, State Street abolished the Freeman-Walter-Abele test used in Toma. However, State Street never addressed the second part of the analysis, i.e., the "technological arts" test established in Toma because the invention in State Street (i.e., a computerized system for determining the year-end income, expense, and capital gain or loss for the portfolio) was already determined to be within the technological arts under the Toma test. This dichotomy has been recently acknowledged by the Board of Patent Appeals and Interferences (BPAI) in affirming a §101 rejection finding the claimed

Art Unit: 3624

invention to be non-statutory. See *Ex parte Bowman*, 61 USPQ2d (BNA) 1669 (BdPatApp&Int 2001).

In the present application, Claims 22-43 have no connection to the technological arts. None of the steps indicate any connection to a computer or technology. The step of storing data on ..transaction and running the at least one selected transaction through a predetermined set of rules .. could be performed manually by a person maintaining a record of selected transaction manually and filtering out the transaction that satisfy a set of predefined set of rules. Therefore, the claims are directed towards non-statutory subject matter. To overcome this rejection the Examiner recommends that Applicant amend the claims to better clarify which of the steps are being performed within the technological arts, such as storing data in a database accessible by a processor or a computer, running ..transaction using the processor through a predetermined set of rules..., etc. The other claims could be similarly amended to include a utilization of a processor.

Claim 43 is analyzed in a similar manner as not being within technological arts because none of the steps are performed by a computer or a processor.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 43 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and

Art Unit: 3624

distinctly claim the subject matter which applicant regards as the invention.

Claim 43 recites limitation "extracting data on the transaction..and storing the transaction data" is unclear because it is unclear as to what is stored in a second database. If the transaction data is stored then the extraction of data on the transaction is moot because the extracted data is not stored.

Second step recites "running the financial transaction through a set of rules.." which is unclear because it fails to positively identify how the extracting step relates to it. This step therefore, does not relate to the extracting step.

Steps "proving a user operable input device" do not relate to any other limitation of the claim. For example, step "weighing the outcome.." because the limitation "the weights" lacks antecedent in prior steps and merely proving an input device does not actually set the parameter in question (the weights or the threshold).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-65 are rejected under 35 U.S.C. 102(b) as being anticipated by Cofod (WO 97/00483) (Cofod).

Claim 1: Cofod teaches a system for identifying a potential for financial irregularity in a financial transaction, comprising: a first database (18) for storing data on at least one selected transaction;

a processor (20) loaded with a rules engine (22), including a predetermined set of rules for determining a potential for the presence of financial irregularity in at least one selected transaction, the processor being operable to access the data in the database to run the predetermined set of rules in respect of the data and to produce an outcome (116, 124, 132) indicative of the potential for a financial irregularity being present in the transaction.

(p. 8 L 5 - p. 9 L 5, p. 9 L 14-16, p. 10 L 10 - p. 12 L 6, p. 17 L 21 - p. 18 L 9)

Claims 2: The system of claim 1 in which the processor is operable to produce numerical outcome for each rule that is transgressed by the transaction.

(p. 24 L 10-20, "statistical measures")

Claim 3. A system of claim 1 in which the set of rules includes a first group of rules corresponding to client information in the data.

(p. 11 L 25-30, ..behavior history of ..patients and those having the highest risk for fraud or abuse)

Art Unit: 3624

Claim 4. The system of claim 1 in which the set of rules includes a second group of rules corresponding to account information in the data.

(p. 11 L 18-25, criteria selection)

Claims 5. The system of claim 1 in which the set of rules includes a third group of rules corresponding to transaction information in the data.

(p. 11 L 18-25, criteria selection)

Claim 6. The system of claim 1 in which the processor is operable to combine the outcomes of running at least a selection of the rules in the set to produce an overall outcome indicative of the potential for a financial irregularity.

(p. 14 L 4-15, statistical scores ..for each entity according to each criteria)

Claim 7. The system of claim 1 in which the processor is further operable to apply a weighting function to the outcome of running each rule according to the importance of the rule to the potential for a financial irregularity being present in the transaction.

(p. 6 L 1-12, "weighted value score")

Claims 8. and 9. user input means for varying the weighting function applied to at least one of the rules; user input means for disabling at least one of the rules.

(p. 14 L 17- 32, "client data input apparatus")

Claim 10. The system of claim 2 in which the processor includes a routine for applying a threshold value to each outcome, which routine is arranged to generate an output of transgression of the rule if the threshold is crossed.

(p. 18 L 5-9, "threshold value")

Claim 11. The system of claim 6 in which the processor includes a routine for applying a threshold value to the overall outcome, which routine is arranged to

Art Unit: 3624

generate an output indicating the potential for a financial irregularity being present if the threshold is crossed.

(p. 18 L 11-20 "level of risk" indicators of high risk, medium risk and low risk)

Claim 12. The system of claim 1 in which at least one of the rules is run in respect of the data to produce the outcome relative to a pattern of activity data corresponding to the rule.

(p. 10 L 17-20, "...it is possible to select specific criteria that can be used to detect the risk of the fraud)

Claim 13. The system of claim 12 including an archive for storing the transaction data, the processor means being arranged to access the archive to establish the said pattern based on previous related transactions.

(p. 12 L 31- p. 13 L 11 refer to data organization and )

Claim 14. The system of claim 1 in which the set of rules includes rules corresponding to client, account and transaction information, the set of rules being selected from the group comprising:

a) transaction amount exceeds average transaction amount for the account by a parameterized limit;

b) transaction amount exceeds average transaction amount for the account by a parameterized percentage;

c) number of transactions against the account has been exceeded by a parameterized percentage;

d) transaction amount exceeds account transaction limit;

e) transaction amount exceeds parameterized limit;

f) transaction is destined for or has come from a listed country;

g) transaction is destined for or has come from an OFAC listed country;

Art Unit: 3624

- h) i) transaction is for a listed currency; ii) transaction is for a listed country/currency combination; iii) transaction is destined for or has come from a listed financial institution;
- i) many small deposits followed by a large withdrawal;
- j) activity against an account that the user has identified as being dormant; k) balance exceeds a parameterized limit;
- l) many deposits over several branches of the user;
- m) large balance over many accounts or clients;
- n) deposits larger than average for the postcode;
- o) balance larger than average for the postcode;
- p) activity against an account or client where there has been no activity for a parameterized period; and
- q) activity against an account marked as suspicious already.

(refer to p. 13 L 13- p. 14 L 2, refer to master criteria)

Claim 15. The system of claim 7 in which a further weighting function is applied to a predefined collection of rules which are transgressed in respect of the same or related transactions.

(p. 16 L 1-12, "The weight for (e.g., multiplier) for the value measure for this criteria is looked up in the weight table).

Claim 16. The system of claim 1 in which the financial transaction is a bank transaction.

(broadly interpreted this is inherent to a financial transaction)

Claim 17. The system of claim 1 in which the financial irregularity is money laundering.

(broadly interpreted money laundering a fraudulent financial activity, therefore inherent to the Cofod system)

Claim 18. The system of claim 1 in which the processor includes an extract routine for accessing transaction data from

Art Unit: 3624

a second database and for transferring the said data to the said first database.

(p. 12 L 6-17, client data converter 14 accesses client data source 12 and transfers to client database 18)

Claim 19. The system of claim 1 in which the outcome is translated into a user alert indicative of the potential for the presence of a financial irregularity in the transaction.

(Fig. 3 L 11-20 "identify the levels of risk")

Claims 20 and 21. The system of claim 10 in which the said output is a user-readable alert.

(see p. 18 Risks List).

Method claims 22-42 have been analyzed per corresponding system claims 1-21.

Claim 43. Cofod teaches a method of identifying a potential for money laundering in a financial transaction associated with a financial institution, comprising:

(abstract)

extracting data on the transaction from a financial transaction account database and storing the transaction data in a second database;

(refer to claim 18 analysis)

running the financial transaction through a set of rules for detecting a potential for the presence of a financial irregularity therein by transgression of one or more of the rules and to produce an outcome indicative of the potential for a financial irregularity being present in the transaction;

(refer to Fig. 2, "weighted entity-criterion score")

weighting the outcome of running the financial transaction through the set of rules;

(refer to p. 17 L 21-30, "weighted entity-criterion score")

Art Unit: 3624

producing a user-readable output of the rules if any transgression exceeds a predetermined threshold;

(Fig. 18 , risk list ..provided to ..printer/plotter.)

providing a user operable input device by which to set the weights against each rule;

(p. 15 L 1-14, pre-processor input data file, p. 17 L 21-30 "weight table 46)

and providing a user operable input device by which to set the threshold in respect of the set of rules.

(p. 14 L 16-20, client data input apparatus 100)

computer-readable medium claims 44-64 have been analyzed as per respective system claims 1-21.

computer-readable medium claim 65 has been analyzed per method claim 43.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gopinathan et al.(US Pat. 5,819,226) teaches a fraud detection system and method using a predictive model such as a neural network to evaluate individual customer accounts and identify potential fraudulent transactions based on learned relationships among known relationships.

Tetro et al. (US 6,095,413)discloses a system and method for enhanced fraud detection in automated credit card processing.

Baulier et al. (US Pat. 6,163,604) teaches a system where Fraud losses in a communication network are substantially reduced by automatically generating fraud management recommendations in response to suspected fraud and by deriving the recommendations as a function of selected attributes of the fraudulent activity.

Fischthal (US Pat. 5,822,741) teaches an apparatus for detecting fraud using a neural network.

Art Unit: 3624

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jagdish Patel whose telephone number is (703) 308-7837. The examiner can normally be reached Monday-Thursday from 8:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vincent Millin, can be reached at (703) 308-1038. The fax number for Formal or Official faxes to Technology Center 3600 is (703) 305-7687. **Draft faxes may be submitted directly to the examiner at (703) 746-5563.**

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1113 or 308-1114. Address for hand delivery is 2451 Crystal Drive, Crystal Park 5, 7<sup>th</sup> Floor, Alexandria VA 22202.



Jagdish N. Patel

(Examiner, AU 3624)

1/6/04